AUSTRALIAN FUNGI.

IV. NEW RECORDS AND REVISIONS (continued).

By C. G. Hansford, M.A., Sc.D., F.L.S., Waite Agricultural Research Institute, Adelaide.

(One Text-figure.)

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Synopsis.

Fifty-three fungi are included in this paper as new records for Australia; of these, one represents a new genus, *Shawiella*, and thirty-five are described as new species.

(272) Balladyna faradayae Hansf., n. sp.

Plagulae amphigenae, usque ad 3 mm. diam. vel numerosae confluentesque, tenues vel subdensae. Hyphae dilute brunneae, rectae vel leniter flexuosae, irregulariter ramosae, dense radianto-reticulatae, cellulis plerumque 12–20 × 4μ. Hyphopodia numerosa, alternata vel subinde subopposita, hyphis obscuriora, continua, subglobosa vel pulvinata, margine integra, angulosa vel sublobata, 6–7μ diam. Perithecia numerosa, dense dispersa, erecta, brevissime stipitata, atra, usque ad 45μ diam.; paries unistratosus, membranaceus, 4–5μ cr., ex cellulis atrobrunneis, angulosis, tenuiter tunicatis, 8–10 × 4–8μ, extus tenuiter atro-granulosis compositus; hyphae statuminentes 4–8, ex lateribus perithecii oriundae, radiantes et descendentes, atrobrunneae, rectae vel flexuosae, crasse tunicatae, septatae, usque ad 150 × 5–7μ. Asci 6–10, in successio maturescenti, aparaphysati, sessili, basali, late ovati vel ellipsoidei, apice rotundati, sessili, tenuiter tunicati, 8-spori, 22–30 × 14–18μ. Sporae conglobatae, oblongae utrinque obtuse rotundatae, 1-septatae, leniter constrictae, leves, cellulis aequalibus, utrinque hyalinae vel subhyalinae, zono centrale atrobrunneo, 13–15 × 6μ.

Hab. in foliis *Faradayae splendidae*, Tully, Queensland, A. Cowan in Herb. Queensland 1775.

Colonies amphigenous, to 3 mm. diam. or numerous and confluent, thin to subdense. Hyphae pale brown, straight or slightly flexuous, branching irregular, acute, closely radiating-reticulate, the cells mostly 12–20 × 4μ. Hyphopodia numerous, alternate or sometimes subopposite, darker than the hyphae, continuous, subglobose to pulvinate with margin entire, angulose or finely lobate, 6–7μ diam. Perithecia numerous, closely scattered, erect on 1-celled short stalk, globose, black, to 45μ diam.; wall of one layer of angulose, dark brown cells 8–10 × 4–8μ, thin-walled, somewhat compressed 4–5μ thick, becoming closely and very finely dark-granulose on surface; apical round pore 10–15μ diam.; hyphal struts 4–8, scattered around the sides, radiating and descending to the leaf surface, dark brown, straight or flexuous, thick-walled, smooth, septate, to 150 × 5–7μ, slightly attenuate to paler obtuse apex. Asci 6–10, developing in succession, aparaphysate, sessile, basal, wide ovate to ellipsoid, rounded at apex, sessile, thin-walled, 8-spored, 22–30 × 14–18μ. Spores conglobate, oblong with obtuse rounded ends, 1-septate, slightly constricted, the cells equal, smooth with dark brown central zone and subhyaline to hyaline ends, 13–15 × 6μ.

(274) Meliola peltata Doidge in *Trans. Roy. Soc. S. Africa*, 5: 727. 1917.

On *Agathis palmerstonii*, Palmerston Highway, Innisfail, Queensland, 5.1955, L. Fraser in Herb. Dept. Agric. Sydney and WARI 6622

(275) Chaetothyrium vermisporum Hansf., var. glabra Hansf., var. n.

Plagulae epiphyllae, plerumque in venis majoribus folii, tenues, leves, albidae vel pallide roseae, effusae, pelliculosae. Hyphae subhyalinae vel fulvidae, septatae, haud

constrictae, ramosissimae, 2–5μ lat., dense reticulatae. Perithecia dispersa vel 2–4 laxe aggregata, depresso-globosa, in sicco cupulato-collapsa, levia, rubro-nigra, nitentia, usque ad 300μ diam. et circa 100μ alt., glabra, pelliculo mycelii vestita; paries perithecii multi-stratosus, subhyalinus, circa 10μ cr., ex cellulis angulosis, 5–10μ diam., fortiter compressibus (2–3μ cr.) compositus, concentrice fibrosus, apice poro circa 10μ diam. pertusus. Asci numerosi, basali, aparaphysati, sessili, clavati, ellipsoidei vel saccati, sursum late rotundati, tenuiter tunicati, 8-spori, 45–60 × 17–20μ. Sporae sub-parallelae, rectae vel curvulae, cylindraceae, obtusae, hyalinae, transverse 9–15-septatae, haud constrictae, leves, 40–54 × 4·5–5·5μ.

Hab. in foliis *Theobromae cacaoes*, Lae, New Guinea, Womersley in WARI 7747 p.p.; New Britain, D. Shaw 1201 p.p. (WARI 7767 p.p.).

Colonies epiphyllous, mostly along the leaf veins, smooth, thin, almost white to pale rosy, effuse, smooth, thinly pelliculose. Hyphae subhyaline to pale yellowish, the main hyphae 4–5μ thick, the secondary hyphae 2–3μ thick, septate, not constricted, closely and irregularly much branched to form a continuous, very thin pellicle over the leaf, enclosing much debris. There is no sign of any penetration of the host leaf. Perithecia scattered, or in loose groups of 2–4 on the mycelial pellicle, flattened globose, becoming cupulate-collapsed when dry, smooth, shining reddish-black, to 300μ diam. and about 100μ high; under microscope pale honey-coloured; glabrous, covered by a continuation of the mycelial pellicle as interwoven yellowish-brown hyphae, divided into more or less angular, thin-walled cells 10–15μ diam., parenchymatous towards centre of upper surface. True perithecial wall of several layers of much flattened, angular, subhyaline parenchyma, the cells 5–10μ diam. and 2–3μ thick, in section appearing as a concentrically fibrous layer, 10–12μ thick, and pierced at the centre of the upper surface by a pore about 10μ diam. Asci numerous, basal, aparaphysate, sessile, clavate, ellipsoid to somewhat saccate, thin-walled, widely rounded at apex, 8-spored, 45–60 × 17–20μ. Spores more or less parallel, straight or bent, cylindric with obtuse ends, hyaline, becoming transversely 9–15-septate, not constricted, smooth, 40–54 × 4·5–5·5μ.

(276) Asterina citriobati Hansf., n. sp.

Plagulae epiphyllae, tenues, usque ad 4 mm. diam. Hyphae brunneae, flexuosae vel tortuosae, irregulariter ramosae, laxe reticulatae, cellulis plerumque 20–30 × 4–5μ. Hyphopodia in hyphis primariis laxe dispersa, alternata vel unilateralia, continua, concolorata, pulvinata vel digitata, margine crenata vel sublobata, 8–14 × 7–10μ. Thyriothecia laxe dispersa, orbiculata, plerumque singula, convexa, usque ad 170μ diam.; paries superior radiatus, subopace atrobrunneus, cellulis 4–8 × 4–6μ, stellatim prope marginem dehiscens, margine laxe fimbriatus, hyphis fimbriarum tortuoso-radiantibus, usque ad 70μ longis; paries inferior hyalinus, structura indistincta. Asci usque ad 8, aparaphysati, globosi vel late ovati, sessili, 8-spori, 35–45 × 28–35μ. Sporae conglobatae, atrobrunneae, oblongae utrinque late rotundatae, 1-septatae, fortiter constrictae, cellulis subaequalibus vel superiore leniter crassiore, subglobosis, episporio verruculoso, 24–27 × 12–14μ.

Hab. in foliis *Citriobati multiflori*, Williams R., New South Wales, L. Fraser in Herb. Dept. Agric., Sydney, and WARI 6633.

Colonies epiphyllous, thin, to 4 mm. diam. Hyphae brown, flexuous to tortuous, irregularly branched, loosely reticulate with wavy meshes and the cells mostly 20–30 × 4–5μ. Hyphopodia loosely scattered along the main hyphae, alternate or unilateral, continuous, concolorous, pulvinate to digitate, the margin crenate to sublobate, 8–14 × 7–10μ. Thyriothecia loosely scattered, orbicular, usually separate, convex, to 170μ diam.; upper wall radiate, subopaque dark brown, cells 4–8 × 5–6μ, the margin loosely fimbriate, the fringing hyphae tortuous-radiating, to 70μ long; dehiscent by numerous stellate fissures almost to the margin into narrow triangular segments; lower wall hyaline, structure indistinct. Asci up to 8, aparaphysate, globose to wide ovate, sessile, 8-spored, 35–45 × 28–35μ. Spores conglobate, dark brown, oblong with broadly rounded ends, 1-septate, rather deeply constricted, the cells subequal or the upper slightly wider, subglobose; epispore coarsely verruculose, 24–27 × 12–14μ.

(277) ASTERINA PAPUENSIS Hansf., n. sp.

Plagulae epiphyllae, tenuissimae, usque ad 2 mm. diam. vel confluentes, leves. Hyphae leniter sinuosae, brunneae, irregulariter lateque ramosae, laxissime reticulatae, cellulis plerumque 30–40 × 3–4μ. Hyphopodia alternata vel laxe dispersa, continua, hemisphaerica vel ovata, integra, concolorata, 6–8 × 5–6μ. Thyriothecia laxissime dispersa, rotundata, convexa, atra, usque ad 150μ diam.; paries superior ex hyphis brunneis radiantibus, 3–4μ latis compositus, margine haud fimbriatus, stellato-dehiscens; paries inferior hyalinus, indistinctus. Asci numerosi, ellipsoidei, apice rotundati, subsessili, 8-spori, aparaphysati, usque ad 45 × 20μ. Sporae 2–3-seriatae, clavulatae, obtusae, 1-septatae, leniter constrictae, leves, 15–18 × 7–8μ, brunnescentes, cellula inferior 6μ lat. Conidia non visa.

Hab. in foliis *Banksiae dentatae*, socio *Meliola banksiae* Hansf., Hombrum Bluff, Papua, D. Shaw 830 p.p. (WARI 7758 p.p.).

Colonies epiphyllous, very thin and scarcely visible, to 2 mm. diam. or confluent, mixed with *Meliola banksiae*, smooth. Hyphae slightly sinuous, brown, irregularly branched at wide angles, very loosely reticulate, the cells mostly 30–40 × 3–4μ. Hyphopodia mostly on the main hyphae, alternate or loosely scattered, continuous, hemispheric to ovate, entire, concolorous with hyphae, 6–8 × 5–6μ. Thyriothecia very loosely scattered, rounded, convex, smooth, black, to 150μ diam.; upper wall of radiating, dark brown hyphae 3–4μ wide, not fimbriate at margin, stellate-dehiscent; lower wall hyaline, indistinct. Asci numerous, erect, ellipsoid, rounded at apex, subsessile, 8-spored, aparaphysate, to 45 × 20μ. Spores 2–3-seriate, becoming dark brown, clavulate with rounded ends, 1-septate in middle and slightly constricted, smooth, 15–18 × 7–8μ, the lower cell only 6μ wide. Conidia not seen.

(278) ASTERINA RANDIAE–BENTHAMI Hansf., n. sp.

Plagulae hypophyllae, dense dispersae vel numerosae et subconfluentes, usque ad 1 mm. diam., densae. Hyphae brunneae, subrectae vel sinuosae, irregulariter ramosae, dense reticulatae, cellulis plerumque 20–30 × 6–8μ. Hyphopodia modice numerosa, alternata vel unilateralia, digitata, apice obtuse rotundata, recta vel curvula, continua, 12–16 × 8–10μ. Thyriothecia in centro plagularum aggregata, plus minusve connata, orbiculata, convexa, usque ad 300μ diam.; paries superior radiatus, opace atro-brunneus, margine plus minusve fimbriatus, hyphis fimbriarum laxis vel lateraliter connatis, rectis vel flexuosis, exhyphopodiatis, usque ad 45μ long.; paries inferior subhyalinus vel brunneolus, structura indistincta; in centro thyriothecia irregulariter dehiscentia. Asci numerosi, aparaphysati, subglobosi, late ovati vel ellipsoidei, sessili, 8-spori, 40–60 × 24–40μ. Sporae conglobatae vel irregulariter 2–3-seriatae, brunneae, oblongae utrinque late rotundatae, 1-septatae, constrictae, leves, 28–32 × 13–15μ, cellulis subaequalibus vel superiore leniter crassiore.

Hab. in foliis *Randiae benthami*, Dorrigo, New South Wales, 4.1953, L. Fraser in Herb. Dept. Agric., Sydney.

Colonies hypophyllous, closely scattered, or numerous and subconfluent, to 1 mm. diam., dense. Hyphae dark brown, substraight to finely sinuous, irregularly branched, closely reticulate, the cells mostly 20–30 × 6–8μ. Hyphopodia fairly numerous, alternate or unilateral at wide angles, digitate with obtuse apex, straight or slightly bent, continuous, 12–16 × 8–10μ. Thyriothecia in close central group and more or less connate, orbicular, convex, to 330μ diam. when single; upper wall radiate, opaque dark brown; margin more or less fimbriate, the fringing hyphae loose or laterally connate in sheets, straight or flexuous, exhyphopodiate, to 45μ long; dehiscence by short irregularly stellate fractures, the centre breaking up and secedent; lower wall subhyaline to pale brownish, the structure indistinct. Asci numerous, aparaphysate, subglobose, wide ovate or ellipsoid, sessile, 8-spored, 40–60 × 24–40μ. Spores conglobate or irregularly 3-seriate, brown, oblong with rounded ends, 1-septate, constricted, smooth, 28–32 × 13–15μ, the cells subequal or the upper slightly wider. No conidia seen.

(279) ASTERINELLA DIOSPYRINA Hansf., n. sp.

Plagulae epiphyllae, usque ad 3 mm. diam. vel confluentes, tenues, atrae, leves. Hyphae brunneae, subrectae vel flexuosae, irregulariter ramosae, laxe reticulatae,

exhyphopodiatae, cellulis plerumque 15–20 × 4μ. Thyriothecia dispersa, singula vel subinde 2-connata, orbicularia, atra, 150–250μ diam., convexa; paries superior subopace atrobrunneus, radiatus, margine non vel leniter fimbriatus, stellatim dehiscens; paries inferior subhyalinus vel brunneolus, tenuis, structura indistincta. Asci modice numerosa, ovato-ellipsoidei, apice rotundati, sessili, 8-spori, tenuiter tunicati, 33–45 × 21–25μ, aparaphysati. Sporae conglobatae, brunneae, oblongae utrinque obtusae, 1-septatae, constrictae, leves, 19–22 × 8–10μ, cellulis subaequalibus vel superiore leniter crassiore.

Hab. in foliis *Diospyri australis*. Gladfield, Queensland, Gwyther in Herb. Queensland 1750.

Colonies epiphyllous, to 3 mm. diam. or confluent, thin, black, smooth. Hyphae brown, substraight to finely flexuous or in places geniculate, irregularly branched, loosely reticulate, radiating from scattered small cellular knots, exhyphopodiate, cells mostly 15–20 × 4μ. Thyriothecia scattered, single or sometimes 2-connate, rounded, black, convex, 150–250μ diam.; upper wall subopaque black-brown, radiate, not or very slightly fimbriate at margin, stellate-dehiscent; lower wall subhyaline to brownish, of indistinct structure, thin. Asci fairly numerous, aparaphysate, ovate to ellipsoid, rounded at apex, sessile, 8-spored, thin-walled, 33–45 × 21–25μ. Spores conglobate, brown, oblong with rounded ends, 1-septate, constricted, smooth, 19–22 × 8–10μ, cells subequal or the upper slightly wider. Germination is by the formation of a primary hyphopodium near the septum, ovate, continuous, entire, about 8 × 6μ, from which the mycelium later develops; no other hyphopodia are formed. The fungus is parasitic by direct penetration of the cuticle by fine filaments beneath the mycelial knots and the thyriothecia, connected with sub-cuticular or intra-epidermal hyaline plates of small cells, often restricted to individual epidermal cells, but sometimes covering several adjacent cells and penetrating some to fill them partially. No further penetration of the host was observed.

(280) Echidnodes diospyri Hansf., n. sp.

Plagulae epiphyllae, usque ad 10 mm. diam., tenues vel subdensae, leves, atrae. Hyphae brunneae, radiantes, ramosae, subrectae vel flexuosae, demum dense reticulatae, exhyphopodiatae, cellulis 15–20 × 4–5μ. Thyriothecia dispersa, elliptica, usque ad 600 × 200μ, nigra, longitudinaliter dehiscentia, margine non vel lenissime fimbriata; paries superior opace atro-brunneus, radiatus, ex hyphis 4–5μ cr. compositus; paries inferior dilute brunneus, tenuus. Asci globosi vel ellipsoidei, sessili, apice rotundati et incrassati usque ad 3μ, 8-spori, usque ad 60 × 20μ, aparaphysati. Sporae conglobatae vel 2-seriatae, atrobrunneae, leves, oblongae vel clavulatae, obtusae, 1-septatae, leniter constrictae, 19–22 × 8–10μ, cellula inferiore leniter angustiore. Conidia nulla.

Hab. in foliis *Diospyri australis*, Mt. Glorious, Queensland, Langdon in WARI 7738.

Colonies epiphyllous, to 10 mm. diam., thin to subdense, smooth. Hyphae brown, radiating from closely scattered knots in the centre of the colony, each connected with small patches of subcuticular mycelium and with a few epidermal, coralloid haustoria, dark brown, much branched, substraight to crooked, becoming coalescent into a closely reticulate colony, exhyphopodiate, cells 15–20 × 4–5μ. Thyriothecia irregularly scattered, at first rounded, becoming elliptic, to 600 × 200μ, black, longitudinally dehiscent, not or very slightly fimbriate around margin; upper wall opaque dark brown, of radiating hyphae 4–5μ wide; lower wall paler brown, continuous with the internal tissue of paraphysoids filling the loculus and eventually dissolving into structureless brown mucus. Asci embedded in the mucose paraphysoids, at first globose, becoming ellipsoid, sessile, rounded and thickened to 3μ at apex, 8-spored, to 60 × 20μ. Spores at first conglobate, becoming 2-seriate, dark brown, smooth, oblong-clavulate, obtuse, 1-septate and slightly constricted in middle, 19–22 × 8–10μ, the upper cell usually slightly wider than the lower. No conidial stage found.

(281) Lembosia notelaeae Hansf., n. sp.

Plagulae epiphyllae, tenues effusae, usque ad 5 mm. diam. vel confluentes, fortiter adhaerentes. Hyphae dilute brunneae, irregulariter radianto-reticulatae, flexuosae vel tortuosae, 3–4μ cr., septatae, irregulariter ramosae. Hyphopodia in hyphis primariis laxe dispersa, singula, continua, hyphis obscuriora, subglobosa, conoidea vel pulvinata,

integra, rotundato-angulosa vel sublobata, 5–7 × 4–6μ. Thyriothecia dispersa, elliptica, orbicularia vel connata et X- vel Y-formia, usque ad 500 × 100μ; paries superior opace atrobrunneus, indistincte radiatus, margine non vel leniter fimbriatus, longitudinaliter dehiscens; paries inferior hyalinus, tenuis, structura indistincta. Asci ovati vel ellipsoidei, sessili, apice late rotundati, incrassati (–4μ), 8-spori, usque ad 34 × 19μ. Sporae conglobatae, oblongae utrinque rotundatae, 1-septatae, leniter constrictae, leves, 13–15 × 7–8μ, brunnescentes, zono subhyalino mediano cellula utraque praedita, leves, 13–15 × 7–8μ, cellula superiore lenissime crassiore. Paraphyses filiformes, simplices vel furcatae, septatae, 2–3μ cr., deorsum hyalinae, apice brunneolae, epithecium tenuum efformantes.

Hab. in foliis *Notelaeae longifoliae*, Victoria Point, Queensland, Langdon 1777.

Colonies epiphyllous, thin, effuse, to 5 mm. diam. or confluent, strongly adherent. Mycelium of pale brown, irregularly and loosely radiating-reticulate, flexuous to tortuous hyphae 3–4μ thick, septate, irregularly branched, loose. Hyphopodia scattered along the main hyphae, single, continuous, darker than the hyphae, subglobose, conoid or irregularly pulvinate, entire or rounded-angulose to sublobate, 5–7 × 4–6μ. Thyriothecia scattered, elliptic, rounded or sometimes confluent and X- or Y-shaped, up to 500 × 100μ; upper wall convex, opaque dark brown, indistinctly radiate, margin not or slightly fimbriate, longitudinally dehiscent by an irregular cleft; lower wall hyaline, thin, the structure indistinct. Asci erect, ovate to ellipsoid, sessile, broadly rounded above and thickened to 4μ, 8-spored, to 34 × 19μ. Spores conglobate, oblong with rounded ends, 1-septate, slightly constricted, becoming brown with a wide paler to subhyaline zone in middle of each cell, smooth, 13–15 × 7–8μ, the upper cell slightly wider than the lower, epispore thin. Paraphyses fairly numerous in young thyriothecia, filiform, simple or furcate, slightly exceeding the asci, septate, 2–3μ wide, hyaline below, pale brown at apex and forming a thin epithecium.

(282) LEMBOSIA TERMINALIAE Hansf., n. sp.

Plagulae hypophyllae, tenues vel densae, leves, atrae, usque ad 5 mm. diam. vel confluentes. Hyphae brunneae, subrectae vel undulatae, cellulis plerumque 20–30 × 3–4μ, opposite vel irregulariter ramosae, laxe reticulatae, demum densae. Hyphopodia alternata vel unilateralia, plerumque in hyphis primariis evoluta, continua, subglobosa, integra, 5–7μ diam. Thyriothecia dense dispersa, atra, convexa, rotundata vel elliptica, singula vel 2–3-connata, tunc saepe X- vel Y-formia, plerumque 200–300 × 100–150μ; paries superior subopace atrobrunneus, indistincte radiatus, margine fimbriatus, longitudinaliter dehiscens; paries inferior brunneolus, structura indistincta. Asci numerosi, erecti, ellipsoidei vel saccati, apice late rotundati, sessili vel breviter nodoso-stipitati, 8-spori, usque ad 60 × 30μ, aparaphysati. Sporae conglobatae, atrobrunneae, oblongae utrinque rotundatae, 1-septatae, constrictae, 22–24 × 11–12μ, cellula superiore leniter crassiore, episporio verruculoso. Conidia non visa.

Hab. in foliis *Terminaliae* spec. indet., Lae, New Guinea, J. Womersley in WARI 5412.

Colonies hypophyllous, thin to dense, smooth, black, to 5 mm. diam. or confluent. Hyphae brown, substraight or finely undulate, the cells mostly 20–30 × 3–4μ, branching opposite or irregular, loosely reticulate, becoming dense with formation of thyriothecia. Hyphopodia alternate or unilateral, mainly on primary hyphae, continuous, subglobose entire, 5–7μ diam. Thyriothecia closely scattered, separate or 2–3-connate and then often X- or Y-shaped, when single rounded to elliptic, mostly 200–300 × 100–150μ, black, convex, radiate; upper wall subopaque dark brown, fimbriate at the margin, longitudinally dehiscent by an irregular slit; lower wall pale brown, of indistinct structure. Asci numerous, erect, ellipsoid to saccate, broadly rounded at apex, sessile or with short nodose stipe, 8-spored, to 60 × 30μ, aparaphysate but separated by aborted or discharged asci. Spores conglobate, dark brown, oblong with rounded ends, 1-septate, constricted, 22–24 × 11–12μ, upper cell slightly wider than the lower; epispore closely and rather coarsely verruculose. No conidial stage found.

(283) SEYNESIA MELALEUCAE Hansf., n. sp.

Ascomata amphigena, laxe irregulariterque dispersa, singula, rotundata, convexa, nigra, nitentia, 100–150μ diam. Mycelium externum nullum. Asci modice numerosi,

aparaphysati, erecti, ovati vel ellipsoidei, bitunicati, sessili, apice rotundati leniter incrassati, 8-spori, circa 30 × 20μ, in maturitate elongati usque ad 40–45μ. Sporae conglobatae, brunnescentes, ellipsoideae, obtusae, 1-septatae, leniter constrictae, cellulis aequalibus, leves 14–16 × 5–5·5μ.

Hab. in foliis *Melaleucae symphocarpae*, Hombrum Bluff, Papua, D. Shaw 825 p.p. (WARI 7775).

Ascomata loosely and irregularly scattered over both surfaces of leaf, single, without superficial mycelium, round, convex, shining black, 100–150μ diam. Upper wall of subopaque dark brown, radiating hyphae 4–5μ wide, not fimbriate at margin, opening by a central irregular pore, later becoming stellate-dehiscent almost to the margin; lower wall hyaline, indistinct. Asci fairly numerous, aparaphysate, erect, ovate to ellipsoid, bitunicate, sessile, rounded and slightly thickened at the apex when young, 8-spored, about 20 × 30μ, at maturity elongating to 40–45μ. Spores conglobate, becoming brown, ellipsoid, obtuse, 1-septate and slightly constricted in middle, smooth, 14–16 × 5–5·5μ, the cells equal.

(284) Didymosphaeria meningiensis Hansf., n. sp.

Perithecia semper hypophylla, dispersa, singula, subepidermalia, nigra, usque ad 150μ diam. et alt., globosa vel lateraliter compressa; paries usque ad 20μ cr., carnoso-membranaceus, pluristratosus, cellulis subopace atrobrunneis, angulosis, 8–12 × 6–8μ; ostiolum truncato-conoideum, poro centrali perforatum. Asci numerosi, cylindracei, apice rotundati, breviter stipitati, tenuiter tunicati, 8-spori, usque ad 70 × 7μ. Sporae oblique 1-seriatae, ellipsoideae, utrinque attenuato-rotundatae, rectae, brunneae, leves, 1-septate, haud constrictae, 10–12 × 4–4·5μ. Paraphyses numerosae, filiformes, 1μ cr., septatae, simplices vel sursum breviter ramosae, ascos leniter superantes.

Hab. in foliis emortuis *Dianellae revolutae*, Meningie, South Australia, L. D. Williams in WARI 6646 p.p.

Perithecia hypophyllous only, scattered singly, subepidermal, usually between the leaf-veins and somewhat compressed by these, black, punctiform erumpent, to 150μ diam. and high, glabrous, with flat conoid ostiole and central pore; wall to 20μ thick, fleshy-membranous, composed of several layers of dark brown, subopaque, angulose cells 8–12 × 6–8μ. Asci numerous, cylindric, rounded at apex, slightly attenuate below into short stipe 3–4μ wide, thin-walled, 8-spored, to 70 × 7μ. Spores obliquely 1-seriate, ellipsoid with attenuate-rounded ends, straight, brown, smooth, 1-septate, not constricted, 10–12 × 4–4·5μ. Paraphyses numerous, filiform, 1μ thick, hyaline, septate, simple or with few short branches near apex, slightly exceeding the asci.

(285) Guignardia acaciae Hansf., n. sp.

Ascomata amphigena, subepidermalia, atra, globosa, glabra, dispersa vel subaggregata, usque ad 200μ diam., suberumpentia per epidermide elevata disrupta; paries 3–6-stratosus, usque ad 30μ cr., atrobrunneus, ex cellulis angulosis compositus, stratum subhyalinum vel dilute olivaceum, concentrice fibrosum, 5–20μ cr. includens. Asci numerosi, aparaphysati, cylindracei, recti vel curvuli, erecti, apice rotundati et incrassati usque ad 4–5μ, subsessili, 8-spori, usque ad 100 × 15μ. Sporae oblique 1–2-seriatae, clavulato-ellipsoideae, obtusae, continuae, hyalinae, leves, 15–19 × 6–7·5μ.

Hab. in foliis emortuis *Acaciae sophorae*, Meningie, South Australia, L. D. Williams in WARI 7424.

On the dead leaves the ascomata are amphigenous, not on leafspots, scattered or subaggregate, subepidermal, black, globose, glabrous, to 200μ diam., becoming suberumpent and opening by irregular apical fracture through the elevated, broken epidermis. Wall at first consisting of 3–6 outer layers, up to 30μ thick, of dark brown, angular, pseudoparenchyma, passing at the sides into loose, dark brown, septate hyphae below the epidermis, with some penetrating the mesophyll. The outer wall encloses an inner layer to 20μ thick at the base, attenuate to about 5μ towards the apex, of concentric, subhyaline to pale olivaceous, much compressed, thin-walled, fibrous tissue, surrounding the hyaline centrum of more or less erect, septate hyphae. The asci are numerous, aparaphysate, and replace the original centrum, whose remains

enclose the mature asci and with a few septate "paraphysoids" remaining between them; asci cylindric, straight or slightly bent, erect, rounded and thickened to 4–5μ at apex, the wall 1–2μ thick below, subsessile, 8-spored, up to 100 × 15μ. Spores obliquely 1–2-seriate, clavulate-ellipsoid, rounded at ends, often slightly attenuate below, continuous, hyaline, smooth, thin-walled, 15–19 × 6–7·5μ.

(286) Leptosphaeria apogon Sacc. & Speg., *Michelia*, 1: 398. 1878.

On dead culms *Phragmites communis*, Meningie, L. D. Williams in WARI 6652.

(287) Leptosphaeria caricicola Fautr., *Rev. Mycol.*, 1893, p. 20.

Causes raised black spots on the stems. exactly like those of species of *Phyllachora*, to 4 mm. long by up to 3 mm. wide, slightly hypertrophied in middle; the whole mesophyll between the vascular bundles and fibres is blackened, and the mycelium penetrates the tissues down to the pith. Perithecia loosely scattered between the fibro-vascular bundles, entirely immersed, with the minute apical pores piercing the epidermis, not raised or projecting; perithecia flask-shaped, to 150μ diam. and high; wall 10–15μ thick, parenchymatous, dark brown. Asci numerous, erect, clavulate-ellipsoid, rounded and thickened to 4μ at apex, attenuate at base into short stipe, 8-spored, up to 80 × 15μ, aparaphysate. Spores 2–3-seriate and slightly overlapping, cylindric with rounded ends, slightly bent, becoming brown, smooth, transversely 2-septate, not or very slightly constricted, the cells subequal, 18–22 × 4–5μ.

On stems of *Cladium* sp., New Zealand, Dingley in DSIR 16070.

It is possible that this fungus is secondary, following upon some other ascomycete (? *Phyllachora* sp.) of which the very much larger, empty perithecia are 1–3 in each spot, buried deeper in the tissues.

(288) Leptosphaeria clavicarpa Ell. & Everh., *Hedwigia*, 1886, p. 109.

On old culms *Phragmites communis*, Meningie, South Australia, L. D. Williams in WARI 7696.

This species has been re-described by E. Muller in *Sydowia*, 4: 256, 1950, and the present specimen agrees with this revision.

(289) Leptosphaeria suaedae Hansf., n. sp.

Perithecia laxe dispersa, singula vel 2-aggregata et subconnata, nigra, immersa, apice leniter erumpentia, globosa vel lateraliter compressa, glabra, usque ad 400μ diam. et alt.; ostiolo truncato-conoideo, poro centrali, irregulari, circa 20μ diam. pertuso, primo clauso et cellulis hyalinis suffulto; paries circa 20μ cr., carnoso-carbonaceus, pluristratosus, cellulis opace atro-brunneis, angulosis, 6–12μ diam., crasse tunicatis, cellulis internis dilutioribus, tenuiter tunicatis, leniter compressibus. Asci numerosi, basali, cylindracei vel subclavulati, apice rotundati, incrassatique usque ad 2μ, deorsum leniter attenuati, breviter stipitati, 8-spori, usque ad 80 × 10–12μ. Sporae oblique 1–2-seriatae, ellipsoideae, utrinque leniter attenuatae, obtusae, rectae vel inequilaterales, 3-septatae, haud constrictae, brunneae, leves, 15–18 × 5–6μ. Paraphyses numerosae, hyalinae, filiformes, simplices vel ramosae, 1–2μ cr., ascos aequantes.

Hab. in ramulis emortuis *Suaedae australis*, Meningie, South Australia, L. D. Williams in WARI 6641.

Perithecia loosely scattered, sometimes 2-aggregate and partly connate, black, immersed with slightly erumpent apex, globose or laterally flattened, glabrous, to 400μ diam. and high; ostiole truncate-conoid with central irregular pore about 20μ diam., at first filled with small, hyaline, thin-walled cells; wall about 20μ thick, fleshy-carbonaceous, of several layers of opaque dark brown, angular cells 6–12μ diam., thick-walled on outside, the inner layers paler and with thinner walls, somewhat compressed. Asci numerous, basal, cylindric to clavulate, rounded and thickened to 2μ at apex, slightly attenuate into short basal stipe, 8-spored, to 80 × 10–12μ. Spores obliquely 1–2-seriate and overlapping, ellipsoid with slightly attenuate, obtusely rounded ends, the base slightly narrower than the apex, straight or inequilateral, 3-septate, not constricted, brown, smooth, 15–18 × 5–6μ, rather thick-walled. Paraphyses numerous, hyaline, filiform, simple or furcate, 1–2μ thick, septate, equalling or slightly exceeding the asci.

(290) LEPTOSPHAERIA WILLIAMSII Hansf., n. sp.

Perithecia epiphylla, laxe dispersa, singula, subepidermalia, nigra, usque ad 180μ diam. et 150μ alt., depresso-globosa, ostiolo truncato-conoideo, poro centrali rotundato 25–30μ diam., primo cellulis hyalinis suffulto; paries membranaceus, atrobrunneus, 10–15μ cr., pluristratosus, cellulis brunneis, angulosis, 6–8μ diam. Asci basali, numerosi, cylindracei, apice rotundati, incrassati usque ad 4μ, deorsum leniter attenuati, breviter stipitati, 8-spori, usque ad 110 × 10–12μ, tunica circa 2μ crassa. Sporae 1–2-seriatae, biconoideae utrinque rotundatae, brunneae, leves, 3-septatae, in medio leniter constrictae, 16–21 × 5–7μ. Paraphyses numerosae, filiformes, hyalinae 1–2μ cr., septatae, simplices vel ramosae.

Conidia (*Hendersonia williamsii* Hansf., n. sp.); pycnidia laxe dispersa vel raro 2-aggregata, subepidermalia, globosa, nigra, punctiformia, usque ad 120μ diam., glabra; paries membranaceus, pseudoparenchymaticus, cellulis externis angulosis, brunneis, 8–15 × 4–8μ, cellulis internis hyalinis; poro apicali rotundato praedita. Conidiophora bacillaria, continua, hyalina, 8–14 × 1μ. Conidia cylindraceo-ellipsoidea, utrinque rotundata, recta vel inequilateralia, brunnea, 3-septata, haud constricta, 12–16 × 6–7μ, episporio 1μ cr., tenuiter granuloso-verruculoso.

Hab. in foliis emortuis *Dianellae revolutae*, Meningie, South Australia, L. D. Williams in WARI 6646 p.p., 7316.

Perithecia epiphyllous only, loosely scattered, single, subepidermal, black, to 180μ diam. and 150μ high, depressed-globose, glabrous, with flat ostiole perforate by a rounded pore 25–30μ diam. at first closed and filled with hyaline, thin-walled, small cells; wall membranous, dark brown, 10–15μ thick, of several layers of brown angulose cells 6–8μ diam. Asci basal, numerous, cylindric, rounded and thickened to 4μ at apex, slightly attenuate below into short stipe 4–5μ thick, 8-spored, to 110 × 10–12μ, wall about 2μ thick. Spores 1–2-seriate and overlapping, often oblique, biconoid with rounded ends brown, smooth, 3-septate, not or slightly constricted at only the middle septum, 16–21 × 5–7μ. Paraphyses very numerous in young perithecia, filiform, hyaline, 1–2μ thick, septate, simple or ramose.

This occurs mixed with the conidial stage: Pycnidia loosely scattered or rarely 2-aggregate, subepidermal, globose, black, punctiform, to 120μ diam., glabrous; wall thinly membranous, of an outer layer of brown angulose cells 8–15 × 4–8μ, and an inner layer of hyaline, thin-walled, smaller cells, opening at apex by a round pore through the epidermis. Conidiophores formed on whole interior surface, bacillary-cylindric, 8–14 × 1μ, continuous, hyaline. Conidia cylindric-ellipsoid with rounded ends, straight or sometimes inequilateral or bent, brown, 3-septate, not constricted or very slightly at middle septum, 12–16 × 6–7μ, epispore 1μ thick, finely granulose-verruculose.

(291) LEPTOSPORELLA CLELANDII Hansf., n. sp.

Perithecia superficial, scattered or in small groups, usually separate, globose to slightly conoid, black, glabrous, to 300μ diam. and high, sitting on a broad base, with small round apical pore; wall thinly carbonous, brittle, pseudoparenchymatous. Asci clavulate, rounded but not thickened at apex, attenuate below into short stipe, to 100 × 20μ, numerous, embedded in a fibrous tissue of hyaline, septate, thin-walled hyphae, which are not loose paraphyses. Spores parallel, long fusoid to almost filiform, hyaline, the ends attenuate-rounded, often slightly bent, transversely 14–17-septate, not constricted, 70–80 × 4–5μ.

Perithecia dispersa vel pauci-subaggregata, superficialia, nigra, glabra, globosa vel subconoidea, usque ad 300μ diam. et alt., basi applanata, apice poro rotundato pertusa; paries subcarbonaceous, fragilis, pseudoparenchymaticus, opace atro-brunneus. Asci clavulati, apice rotundati, haud incrassati, deorsum in stipite brevi attenuati, 8-spori, usque ad 100 × 20μ, in textu hyalino plectenchymatico immersi. Sporae parallelae, elongato-fusoideae vel subfiliformes, hyalinae, utrinque attenuato-rotundatae, subrectae vel curvulae, 14–17-septatae, haud constrictae, 70–80 × 4–5μ.

Hab. in ramis emortuis *Acaciae kempeanae*, Ernabella, Musgrave Ranges, Central Australia, 8.1933, J. B. Cleland in WARI 5498.

(292) MAIREELLA TARRIETIAE Hansf., n. sp.

Stromata hypophylla, dispersa, atra, to 600μ diam., usque ad 40μ crassa, superficialia, sursum rugulosa et loculos subglobosos dense aggregatos ferentia; deorsum in centro per stomata folii ad hypostromatis connexa; hypostroma hyalina, dense plectenchymatica, ex hyphis dense septatis, intertextis, intercellularibus composita. Loculi separati vel plus minusve connati, nigra, sessili vel brevissime stipitati, subglobosi, glabri vel leniter rugulosi, usque ad 140μ diam. et alt., apice rotundati vel subpapillati; paries lateraliter usque ad 25μ cr., pseudoparenchymaticus, pluristratosus, ex cellulis atrobrunneis, subopacis, angulosis, crasse tunicatis, 4–8μ diam. compositus, intus pallidior; primo solidi demum centrum parenchymaticum hyalinum mucoso-dissolvens et paries poro irregulari apicali aperto. Asci aparaphysati, basali, cylindraceo-ellipsoidei, apice rotundati, subsessili, crasse tunicati, 8-spori, 30 × 8μ (immaturi). Sporae 2-seriatae, oblongae utrinque rotundatae, 1-septatae, leniter constrictae, leves, hyalinae vel dilutissime brunneolae, 10 × 3μ (immaturae), cellulis aequalibus.

Hab. in foliis *Tarrietiae trifoliatae*, Eumundi, Queensland, Bailey in Herb. Queensland 1755.

Stromata hypophyllous, scattered, black, to 600μ diam., appearing as dense groups of more or less separate perithecioid locules arising from a common superficial black stroma up to 40μ thick, pseudoparenchymatous, below and often enclosing the leaf-scales. The centre of the external stroma is connected through the leaf stomata, and apparently also directly through the cuticle and between the epidermal cells, with an internal hypostroma, consisting of closely septate, intricate hyphae, penetrating the whole mesophyll to the upper epidermis, intercellular and enclosing the host cells, not forming haustoria in these, forming a solid mass up to 180μ diam. inside the leaf, rarely with subsidiary hypostromata away from the centre; the central part of the internal stroma sometimes turns brown in the lower mesophyll, the remainder hyaline and thin-walled.

The loculi are contained singly in perithecioid outgrowths of the external stroma, sessile or very short stipitate, closely crowded and sometimes loosely connate, subglobose, black, subcarbonaceous, glabrous, smooth or slightly rugulose, to 140μ diam. and high, with rounded or very slightly papillate apex; wall to 25μ thick at the sides, thinner at the apex, of several layers of angulose, dark brown, pseudoparenchyma, the cells thick-walled, angulose, 4–8μ diam., the inner cells somewhat compressed, paler and thinner-walled, continuous with the basal stroma; there is no distinct perithecial wall. The loculi are at first filled with a hyaline cellular tissue, which is gradually replaced by the developing asci; finally the loculus opens by a lysigenous, irregular apical pore. Asci aparaphysate, basal, cylindric-ellipsoid, rounded at apex, subsessile, thick-walled, 8-spored, 30 × 8μ (probably immature). Spores 2-seriate and overlapping, oblong with rounded ends, 1-septate, slightly constricted, smooth, hyaline to pale brownish, 10 × 3μ (immature), the cells equal.

This specimen was published as "*Dimerosporium tarrietiae* Cooke & Mass." by Bailey, Bot. Bull. 9, Qld. Dept. Agric., 1894, and in Compr. Catal. Queensland Plants, p. 766, 1909. I have been unable to trace valid publication of this name.

(293) MYCOSPHAERELLA ANGOPHORAE Hansf., n. sp.

Maculae amphigenae, dispersae, usque ad 8 mm. diam., rotundatae vel irregulares, raro confluentes, griseo-luteae, zono atrobrunneo 0·5–1 mm. lato circumdatae. Perithecia plerumque epiphylla, dispersa, subepidermalia, globosa, atra, glabra, usque ad 60μ diam., ostiolo plano, per epidermidem elevatam pustulatam suberumpento, poro rotundato 10–15μ diam. pertuso; paries tenuiter membranaceus, 6–10μ cr., 1–2-stratosus, cellulis angulosis, leniter compressibus, tenuiter tunicatis, 6–10μ diam. Asci basali, fasciculati, aparaphysati, saccati, apice attenuato-rotundati, incrassati (–3μ), sessili, 8-spori, usque ad 30 × 12μ. Sporae 2–3-seriatae vel inordinatae, cylindraceo-fusoideae, utrinque obtuse rotundatae, 1-septatae, haud constrictae, hyalinae, leves, 11–14 × 2·5–3μ, cellulis aequalibus.

Hab. in foliis *Angophorae bakeri*, Londonderry, New South Wales, 12.1946, L. Fraser in Herb. Dept. Agric. Sydney and WARI 6632.

Leafspots amphigenous, scattered, to 8 mm. diam., rounded or irregular, not usually confluent, yellowish-grey in centre, surrounded by a dark brown zone 0·5–1 mm. wide. Perithecia mainly epiphyllous, scattered singly, snbepidermal, becoming slightly erumpent through the broken pustulate epidermis, globose, black, glabrous, to 60μ diam., with flat ostiole perforate by a central round pore 10–15μ diam.; wall membranous, 6–10μ thick, of 1–2 layers of angulose, pale brown, thin-walled, slightly compressed cells 6–8μ diam. Asci in basal fascicle, aparaphysate, saccate, narrowed to the rounded, thickened (–3μ) apex, and to sessile base, 8-spored, to 30 × 12μ. Spores 2–3-seriate or inordinate, cylindric-fusoid, the ends slightly attenuate and obtusely rounded, straight or slightly bent, 1-septate, not constricted, hyaline, smooth, 11–14 × 2·5–3μ, the cells equal.

(294) Mycosphaerella eucalypti (Wakef.) Hansf., n. comb.
= *Hypospila eucalypti* Wakef., *Kew Bull.*, 1912, p. 190.

Leafspots amphigenous, brownish-red, about 4 mm. diam. Perithecia irregularly and concentrically scattered, immersed, globose, punctiform, black, glabrous, globose to 150μ diam.; wall of 1–2 layers of angulose parenchyma, the cells 10–20 × 10μ, thin-walled inside, the outer layer rather thick-walled, the whole wall 8–10μ thick, the cells compressed, pale brown below, darker around ostiole; ostiole flat papillate, penetrating the epidermis and opening by a round pore about 15μ diam. Asci in a basal cluster, erect, aparaphysate, fusoid to ellipsoid, attenuate-rounded and thickened at the apex, attenuate below to sessile base, thick-walled, 8-spored, to 100 × 24μ. Spores parallel, cylindric with rounded ends, hyaline, 1-septate, not or very slightly constricted, straight or slightly bent, thin-walled, smooth, 45–50 × 6μ.

On leaves of *Eucalyptus* sp., Darra, Queensland, C. T. White in Herb. Queensland 1737, part of type.

(295) Mycosphaerella lepidospermatis Hansf., n. sp.

Maculae amphigenae, elongato-ellipsoideae, atrobrunneae, in centro arescentes, pallidiores, usque ad 8 × 2mm., interdum confluentes. Perithecia irregulariter dispersa, immersa, atra, globosa, glabra, usque ad 140μ diam.; ostiolum indistinctum, poro rotundato pertusum; paries perithecii membranaceus, ex cellulis angulosis, brunneis, 2–3-stratosis, 5–8μ diam. compositus. Asci basali, fasciculati, ellipsoidei vel subsaccati, sessili, apice rotundati, incrassati usque ad 4μ, 8-spori, usque ad 48 × 13μ, aparaphysati. Sporae oblique 1–3-seriatae, hyalinae, subfusoideae, utrinque rotundatae, plerumque rectae, leves, 1-septatae, lenissime constrictae, 11–13 × 2–2·5μ, interne 4-vacuolatae.

Hab. in foliis *Lepidospermatis gladiati*, Meningie, South Australia, L. D. Williams in WARI 7712.

Leafspots amphigenous, elongate ellipsoid, at first dark brown, then the centre drying out to whitish buff and dotted with the black perithecia, to 8 × 2 mm., sometimes confluent. Perithecia immersed, black, punctiform, glabrous, smooth, closely scattered on leafspot, to 140μ diam.; ostiole indistinct, pierced by a round pore through the host epidermis; perithecial wall membranous, of 2–3 layers of brown, angular parenchyma 5–8μ diam. Asci in basal rosette, ellipsoid to somewhat saccate, sessile, rounded and thickened to 4μ at apex, 8-spored, to 48 × 13μ, aparaphysate. Spores obliquely 1–3-seriate, hyaline, subfusoid with rounded ends, usually straight, smooth, 1-septate and slightly constricted, 11–13 × 2–2·5μ, each cell containing two rather prominent vacuoles.

This occurs mixed with *Septoria lepidospermatis* Cooke & Mass., on very similar leafspots on the same leaves, and probably represents the perithecial stage.

(296) Phaeosphaerella williamsii Hansf., n. sp.

Perithecia epiphylla et scapicola, subepidermal, dense dispersa, nigra, punctiformia, glabra, globosa, usque 90μ diam.; paries unistratosus, pseudoparenchymaticus, cellulis atrobrunneis, angulosis, 6–10μ diam., 5–8μ cr., tenuiter tunicatis; poro apicali rotundato, 10–15μ diam. Asci aparaphysati, basali, fasciculati, ellipsoidei vel breviter cylindracei, apice rotundati, sessili, tenuiter tunicati, 8-spori, 30–36 × 6–9μ. Sporae 2-seriatae, saepe oblique, hyalinae demum dilute brunneae, ellipsoideae utrinque rotundatae, 1-septatae, haud constrictae, leves, 6–9 × 3–4μ.

Hab. in foliis et scapibus *Dianellae revolutae*, Meningie, South Australia, L. D. Williams in WARI 6649 p.p.

Perithecia on dead leaves and scapes, subepidermal, closely scattered, separate, black, punctiform, glabrous, globose, to 90μ diam.; wall thin membranous, 5–8μ thick, of a single layer of dark brown, angulose cells 6–10μ diam.; apical pore 10–15μ diam., rounded, opening through epidermis. Asci aparaphysate, basal, fasciculate, ellipsoid to short cylindric, rounded at apex, sessile, thin-walled, 30–36 × 6–9μ, 8-spored. Spores 2-seriate and overlapping, often oblique, hyaline, becoming pale brown, ellipsoid with rounded ends, 1-septate, not constricted, smooth, 6–9 × 3–4μ.

(297) Rosenschieldiella pullulans (Berk.) Hansf., comb. n.

= *Sphaeria pullulans* Berk., *Fl. Novae-Zeal.*, II: 205. 1855. = *Lizonia pullulans* (Berk.) Sacc., *Syll. Fung.*, 1: 575. 1882.

Mycelium penetrating the whole thickness of the host leaf as hyaline, intercellular hyphae, without haustoria in the cells, aggregated in places into irregular, loose columns of tissue between the upper and lower epidermis, which darken at one end to form a solid mass of vertical cells 10–18 × 6–8μ. This dark mass, when at the upper end of the column extends over the palisade tissue, with small extensions down into this. The dark internal stroma enlarges vertically to burst through the epidermis to extend further as an external stroma up to 50μ thick. Viewed from above the stroma consists of a tightly packed, irregular mass of rounded to subglobose, perithecioid lobes 120–150μ diam., black, slightly rough on the surface.

Stromata scattered, amphigenous, often more or less confluent along the leaf margin, surrounded by the broken epidermis, $\frac{1}{4}$–$\frac{3}{4}$ mm. diam., or to 1 × $\frac{1}{4}$ mm. In section each lobe contains a single globose loculus, without a distinct perithecial wall, completely immersed in the stroma tissue, subglobose with conoid apical extension, at maturity 70–90μ diam. and to 110μ high, opening by an irregular apical aperture, and surrounded by a dark wall of stroma tissue in 2–5 layers, 20–28μ thick around the sides, thinner towards the apex, the surface slightly rough by projecting, rounded cells. At the sides these lobes are more or less connate, and with the whole basal half continuous with the external stroma, free above. At first the loculus is about three-quarters filled with a solid mass of delicate, hyaline parenchyma, the upper part with looser short, tortuous, hyaline hyphae, some of which remain in the mature, opened loculus at the apex as short, septate "periphyses". The numerous asci develop at the base of the loculus, and replace almost the entire original contents; erect, narrow ellipsoid to subcylindric, subsessile, rounded at apex and there thickened to 3–4μ, bi-tunicate, 8-spored, aparaphysate, 38–48 × 9–11μ. Spores obliquely more or less 2-seriate, hyaline, subfusoid with rounded ends, slightly bent, smooth, 1-septate in middle, not or very slightly constricted, 15–19 × 3–4μ, cells equal.

On *Astroloma humifusum*, Tyors Lake, Victoria, Nov., 1952, R. Melville 1954 in Herb. Kew.

(298) Vestergrenia leucopogonis Hansf., n. sp.

Perithecia et pycnidia amphigena, laxe dispersa, singula vel raro 2-aggregata, atra, elevata, levia, nitentia, immersa; perithecia globosa, 400–500μ diam., circa 400μ alt., sursum ad 250μ elevata et clypeo epidermale, atro, parenchymatico, usque ad 30μ crasso adnata; paries perithecii tenuus, dilute brunneus, cellulis 10–20 × 5–7μ, interne concentrice fibrosus, hyalinus, poro apicali pertusus. Asci basali, clavulato-ellipsoidei, apice rotundati et incrassati usque ad 10μ, subsessili, bitunicati, 8-spori, usque ad 95 × 24μ, aparaphysati. Sporae hyalinae, continuae, ellipsoideae, obtusae, leves, 24–26 × 9–13μ, in asco 2–3-seriatae.

Pycnidia perithecia consimilia, usque ad 270μ diam. et alt.; paries 2–3-stratosus, extus brunneus, intus parenchymaticus, hyalinus. Conidiophora recta, simplicia, 0–1 septata, hyalina, 16–20 × 3–5μ. Conidia singula, terminalia, hyalina, globosa vel late ovata, levia, continua, 11–13μ diam.

Hab. in foliis *Leucopogonis fasciculati*, Auckland, New Zealand, Dingley in DSIR 17246.

Leafspots none. Perithecia and pycnidia scattered singly, or rarely 2-aggregate, amphigenous, black, raised, smooth, shining, with minute apical pore. Perithecia sunken in leaf mesophyll, with the upper part adnate to the epidermal clypeus, which is black, parenchymatous and to 30μ thick; perithecia subglobose, 400–500μ diam. and about 400μ high, raised above to 250μ above leaf surface; wall thin, pale brownish outside, composed of elongate cells 10–20 × 5–7μ, lined by an inner layer of compressed hyaline parenchyma, appearing concentrically fibrous. Young perithecia are filled with erect, hyaline, septate hyphae convergent towards the apex, the lateral hyphae connected to the perithecial wall above and below, the inner hyphae free above, composed of cells 10–15 × 3–4μ, thin-walled. The apical pore has a thin lining of these same hyphae, not protruding from the apex, which pierces the epidermal clypeus. Asci basal, growing up between the hyphae of the centrum, clavulate-ellipsoid, rounded and thickened to 10μ at the apex when young and to 5μ around the sides, subsessile, 8-spored, bitunicate, aparaphysate, up to 95 × 24μ. Spores 2–3-seriate, hyaline, continuous, ellipsoid with rounded obtuse ends, smooth, 24–26 × 9–13μ, contents finely granular.

Pycnidia similar to the perithecia but smaller, to 270μ diam. and high; the outermost wall layer olivaceous, parenchymatous, with 2–3 layers of compressed hyaline parenchyma inside, the innermost layer bearing crowded conidiophores. Conidiophores simple, straight, 0–1-septate, hyaline, 16–20 × 3–5μ, forming single, terminal conidia. Conidia hyaline, globose to wide ovate, thin-walled, smooth, continuous, 11–13μ diam.

The whole of the mesophyll parenchyma of the leaf is penetrated by branched, septate, hyaline, intercellular hyphae, which form individual, hemispheric, coralloid-branched haustoria, up to 20μ diam. in the host cells.

(299) Lasiosphaeria meningiensis Hansf. n. sp.

Perithecia laxe dispersa, immersa demum erumpentia, singula vel raro 2-aggregata, subglobosa vel obtuse conoidea, basi plana, usque ad 450μ diam. et alt., extus sericeo-albida ex hyphis adpressibus hyalinis, setis simplicibus, brunneis, simplicibus, rectis vel flexuosis, levibus, crasse tunicatis septatis, obtusis, usque ad 120 × 7–8μ, commixtis; paries carnoso-membranaceus, in sicco fragilis, usque ad 25–30μ cr., pluristratosus, ex cellulis angulosis compositus, intus pallidior; ostiolo rotundato vel obtuse conoideo, poro rotundato 20–30μ diam. pertuso. Asci numerosi, basali, clavato-fusoidei, sursum attenuato-rotundati, haud incrassati, stipitati, 16-spori, p. sp. usque ad 180 × 24μ. Sporae parallelae, subrectae vel varie curvatae, cylindraceae, utrinque rotundatae, hyalinae, leves, 0–1–3-septatae, demum 9–11-septatae, haud constrictae, tenuiter tunicatae, usque ad 70 × 5μ. Paraphyses numerosissimae, filiformes, 1–1·5μ cr., usque ad 350μ longae, dubiter septatae, massam gelatinosam efformantes.

Hab. in ramulis emortuis *Eucalypti* spec. indet., Meningie, South Australia, L. D. Williams in WARI 6670.

Perithecia loosely scattered, single or rarely 2-aggregate, erumpent and finally almost superficial, subglobose to obtusely conoid on a flattened base, to 450μ diam. and high; surface covered with adpressed hyaline or subhyaline hyphae and appearing silky white, also with scattered dark setae, simple, straight or flexuous, smooth, thick-walled, septate, obtuse, to 120 × 7–8μ; wall fleshy-membranous, somewhat brittle and hard when dry, to 25–30μ thick, composed of several layers of brown angulose cells 8–15μ diam., rather thick-walled on outside, thinner and paler inside; ostiole rounded to bluntly conoid, with central round pore 20–30μ diam. Asci numerous, basal, clavate-fusoid, slightly attenuate to rounded apex, not thickened, attenuate below into rather narrow stipe to 30μ long, 16-spored, p. sp. to 180 × 24μ. Spores parallel and overlapping in ascus, variously curved to nearly straight, cylindric with obtusely rounded ends, hyaline, smooth, long remaining 0–1–3-septate, finally 9–11-septate, not constricted, thin-walled, to 70 × 5μ Paraphyses very numerous, filiform, 1–1·5μ thick, to 350μ long, forming with the asci a gelatinous hymenium.

(300) Leptomassaria dianellae Hansf., n. sp.

Perithecia laxe dispersa, in areas dealbatas foliorum emortuorum, singula, epiphylla, atra, glabra, usque ad 280μ diam. et 300μ alt., immersa; ostiolum breviter conoideum,

erumpens, poro centrali rotundato, 30μ diam. perforatum; paries 2–4-stratosus, pseudo-parenchymaticus, usque ad 25μ cr., submembranaceus, in sicco fragilus, subdurusque, cellulis atrobrunneis, angulosis, 8–12 × 5–9μ, tenuiter tunicatis. Asci basali, cylindracei, apice rotundati, deorsum leniter attenuati, breviter lateque stipitati, tenuiter tunicati, 8-spori, usque ad 150 × 12–14μ. Sporae oblique 1-seriatae, atrobrunneae, ellipsoideae, rectae vel leniter inequilaterales, continuae, leves, 16–19 × 9–11μ, episporio mucoso 1–2μ cr. praeditae. Paraphyses numerosae, ascos aequantes, hyalinae, filiformes, simplices vel ramosae, 2–3μ cr., septatae, mox collabescentes.

Hab. in foliis emortuis *Dianellae revolutae*, Meningie, South Australia, L. D. Williams in WARI 6650 p.p.

Perithecia loosely scattered on bleached areas of the dead leaves, single, epiphyllous, black, glabrous, to 280μ diam. and 300μ high, immersed in mesophyll with the short conoid ostiole slightly erumpent and surrounded by the pustulate-elevated epidermis, with which it is fused at the sides, with central apical pore about 30μ diam.; perithecial wall up to 25μ thick, fleshy-membranous when fresh, becoming harder and brittle when dried, of 2–4 layers of dark brown, angulose thin-walled cells 8–12 × 5–9μ. Asci basal, cylindric, rounded at apex, slightly attenuate below into short, wide stipe, thin-walled, 8-spored to 150 × 12–14μ. Spores obliquely 1-seriate, dark brown, ellipsoid, straight or slightly inequilateral in side view, continuous, smooth, 16–19 × 9–11μ, with mucose hyaline sheath 1μ thick when mature, 2–3μ thick on younger spores, giving a pseudo-septate appearance to the ascus. Paraphyses numerous, equalling the asci, hyaline, filiform, simple or ramose, 2–3μ wide, septate, soon collapsing.

(301) Phomatospora leptospermi Hansf., n. sp.

Maculae nullae. Perithecia dispersa vel raro 2-aggregata, immersa, atra, levia, nitentia, usque ad 350μ diam. et ad 400μ alt.; clypeus amphigenus, superior usque ad 55μ cr., opace atrobrunneus, parenchymaticus, perithecium totum obtegens et lateraliter in parenchymatice mesophylli descendens, clypeus inferior minor et tenuior. Paries perithecii tenuus, hyalinus, concentrice fibrosus, ex cellulis fortiter compressibus compositus. Asci cylindracei, tenuiter tunicati, breviter stipitati, apice rotundati et leniter incrassati, annulo interno refringente 5μ diam. et 1μ cr., p. sp. circa 80μ long., asci usque ad 115 × 8–10μ, 8-spori. Sporae oblique 1-seriatae, ellipsoideae, obtusae, continuae, hyalinae, leves, 11–13 × 7–8μ, intus granulosae. Paraphyses paucae, ascos aequantes, filiformes, 2–2·5μ cr., dubiter septatae, simplices.

Hab. in foliis *Leptospermi scoparii*, Auckland, New Zealand, Dingley in DSIR 17247.

Perithecia scattered or rarely 2-aggregate, immersed, occupying the whole leaf thickness with both surfaces slightly raised, black, smooth, shining, with central round pore in upper surface; epidermal clypeus amphigenous, the upper covering the whole perithecium and extending downwards around its sides into the palisade tissue, up to 55μ thick, opaque black-brown, parenchymatous; lower clypeus less extensive and thinner; loculus to 350μ diam. and 400μ high. Perithecial wall thin, of much compressed hyaline parenchyma, including some browned host cells, appearing concentrically fibrous. Asci cylindric, narrowed below into short stipe, thin-walled, rounded and slightly thickened at apex, with internal refringent apical ring about 5μ diam. and 1μ thick, 8-spored, to 115 × 8–10μ, p. sp. about 80μ long. Spores obliquely 1-seriate, ellipsoid, continuous, hyaline, smooth, 11–13 × 7–8μ, with granular contents. Paraphyses few, equalling the asci, filiform, 2–2·5μ thick, doubtfully septate, simple.

(302) Phyllachora cladii-glomerati Hansf., n. sp.

Stromata culmicolous, nigra, nitentia, levia, leniter tumescentia, dispersa vel subinde confluentia, usque ad 5 × 2 mm., elliptica; clypeus in epidermidem et parenchymam, subopace atrobrunneus, parenchymaticus, usque ad 600μ alt. et perithecia includens; extus in hyphis dilute brunneis vel subhyalinis, ramosis, septatis, dissolvens. Perithecia immersa, ampullacea, usque ad 330μ diam., collo apicali usque ad 200μ long. et 90μ diam.; paries perithecii hyalinus, circa 10μ cr., concentrice fibrosus, ex cellulis angulosis, fortiter compressibus compositus. Asci numerosi, erecti vel sursum convergentes, cylindracei, apice rotundati, breviter stipitati, 4–(8)-spore, 120–140 × 10–11μ.

Sporae oblique 1-seriatae, ellipsoideae, hyalinae, continuae, leves, 22–26 × 7·5–9·5μ. Paraphyses numerosae, filiformes, hyalinae, 1–2μ cr., ascos aequantes, dubiter septatae, sursum subinde furcatae.

Hab. in culmos *Cladii glomerati*, Auckland, New Zealand, Dingley in DSIR 17245.

Stromata culmicolous, black, shining, smooth, slightly swollen, closely scattered or sometimes confluent, to 5 × 2 mm., elliptic, marked with the punctiform apical pores of the loculi. Stroma tissue filling the epidermis and underlying parenchyma with subopaque dark brown parenchyma, extending to 600μ deep and enclosing the perithecia, dissolving outwards into pale brown, subhyaline to hyaline, branched, septate, intercellular hyphae in host parenchyma.

Perithecia completely immersed below the vascular bundles of the host, flask-shaped with neck to 200μ long and 90μ diam. opening between the vascular bundles and lined with delicate hyaline periphyses, penetrating the clypeal tissue as a flat pore on the surface; body of perithecium to 330μ diam., globose, or where crowded, flattened and occasionally partially confluent with others; perithecial wall hyaline, about 10μ thick, composed of much compressed parenchyma and appearing concentrically fibrous. Asci formed over the lower two-thirds of the internal surface, erect, convergent towards the neck of the perithecium, mixed with numerous, filiform, hyaline paraphyses, which are sometimes furcate above, doubtfully septate, 1–2μ thick, equalling the asci. Asci narrow cylindric, rounded at apex, shortly stipitate, thin-walled, 4–(8)-spored. 120–140 × 10–11μ. Spores obliquely 1-seriate, slightly overlapping, ellipsoid with rounded ends, hyaline, continuous, smooth, 22–26 × 7·5–9·5μ.

(303) Hypocrea schweinitzii (Fr.) Sacc., *Syll. Fung.*, 2: 522. 1883.

On dead wood, Meningie, South Australia, L. D. Williams in WARI 7528.

This has been described by Petch in *Trans. Br. Mycol. Soc.*, 21: 290. 1938.

(304) Nectria fraserae Hansf., n. sp.

Perithecia dense aggregata, superficialia, separata, globosa, rubra, levia, subnitentia, usque ad 150μ diam., ostiolo conoideo, flavo, poro rotundato, circa 20μ diam., periphysato pertuso; paries carnosus, pluri-stratosus, cellulis aureis, angulosis, 10–15 × 8–10μ, tenuiter tunicatis. Asci numerosi, basali, cylindracei vel clavulati, apice rotundati, breviter stipitati, 8-spore, tenuiter tunicati, circa 40 × 12μ (? immaturi). Sporae hyalinae, 1–2-seriatae, oblongo-ellipsoideae, utrinque leniter attenuatae, obtuse rotundatae, 1-septatae, haud constrictae, leves 18–22 × 8–9μ. Paraphyses numerosae, ascos leniter superantes, hyalinae, filiformes, continuae, 1–1·5μ cr.

Conidia (*Tubercularia fraserae* Hansf.): Stroma insectum partim vel omnino velens, flaveola, minute pruinosa, sporodochia 1–4 ferens; sporodochia discoidea vel subpatelliformia; conidiophora dense stipata, erecta, hyalina, simplicia, furcata vel 1-verticillata, ramulis erectis, cylindraceis, usque ad 20 × 1·5μ. Conidia solitaria, acrogenea, ellipsoidea, hyalina, levia, continua, 4–6 × 2·5μ, in massa punicea.

Hab. in *Mnaspidi citri* in foliis et ramis *Citri* spec., Colo, New South Wales, L. Fraser in Herb. Dept. Agric. Sydney and WARI 6621.

The insect host, *Mnaspis citri*, is first partly or wholly covered by the conidial stroma, which may slightly extend beyond its margins, and is yellowish, minutely pruinose, bearing one to four pinkish, smooth conidial masses; each of these is borne on a discoid to slightly concave sporodochium arising direct on the surface of the stroma, and consisting of very closely packed, erect, simple, furcate or once-verticillate, hyaline conidiophores; the ultimate sporogenous branches are cylindrical, erect, to 20 × 1·5μ, forming single, successive conidia at the apex, apparently exogenous, as no sign of an open phialiform end was found. The conidia are ellipsoid, continuous, hyaline, smooth, 4–6 × 2·5μ, pinkish in mass.

Around the edges of the conidial stroma the perithecia are later formed in tightly packed groups, superficial, sessile, separate, globose, bright red, smooth, and slightly shining, with central, short conoid, orange-red ostiole with a central round pore about 20μ diam., lined with short periphyses; perithecial wall fleshy, 15–20μ thick, composed of several layers of red-orange angular cells 10–15 × 8–10μ, with inner layers hyaline

and compressed. Asci numerous, basal, cylindric to clavulate, rounded at apex, shortly stipitate, 8-spored, thin-walled (40 × 12μ, immature). Mature spores shed from the perithecia are hyaline, oblong-ellipsoid with attenuate-obtuse rounded ends, 1-septate, not constricted, smooth, thin-walled, 18–22 × 8–9μ. Paraphyses numerous, somewhat exceeding the asci, hyaline, filiform, continuous, 1–1·5μ wide.

(305) Pleogibberella leptospermi Hansf., n. sp.

Perithecia dispersa, singula, immersa, depresso-globosa, usque ad 320μ diam. et 150μ alt., atro-coerulea, glabra; paries membranaceus, 8–10μ cr., plectenchymaticus, cellulis meandricis, 8–15 × 4–5μ, dilute coeruleis; ostiolum breviter conoideum, poro rotundato, 30–40μ diam. pertusum. Asci numerosi, erecti, cylindracei, apice rotundati et circa 2μ cr.-tunicati, subsessili vel breviter nodoso-stipitati, recti vel curvati, 8-spori, 90–100 × 10–12μ. Paraphyses numerosae, simplices, filiformes, flexuosae, dubiter septatae, 1μ cr., hyalinae, ascos aequantes. Sporae oblique 1-seriatae, hyalinae, ovatae, utrinque rotundatae, apice obtusae, basi lenissime attenuatae, leves, transverse 5–(7)-septatae, subinde leniter constrictae, incomplete longitudinaliter 1-septatae, 16–20 × 7–8μ.

Hab. in ramulis emortuis *Leptospermi* spec., Meningie, South Australia, L. D. Williams in WARI 6635.

Perithecia scattered singly, immersed in outer bark, flattened globose, to 320μ diam. and 150μ high, with very flat ostiole and opening on surface by an irregularly rounded pore 30–40μ diam., blue-black, glabrous; wall thinly membranous, 8–10μ thick, composed of much compressed, meandering cells 8–15 × 4–5μ, bluish; when mounted in lactophenol the wall around the apical pore retaining its blue-black colour, while the remainder changes to pale reddish-brown. Asci very numerous, erect, cylindric with rounded apex thickened to about 2μ, subsessile or shortly nodose-stipitate, straight or bent, 8-spored, 90–100 × 10–12μ. Paraphyses numerous, simple, filiform, flexuous, doubtfully septate, hyaline, 1μ thick, equalling the asci. Spores obliquely 1-seriate, hyaline, ovate with rounded ends, the apex often slightly more obtuse than the base, smooth, transversely 5–(7)-septate, sometimes slightly constricted at the middle or other septa, with incomplete longitudinal septum, 16–20 × 7–8μ.

(306) Lophiostoma clelandii Hansf., n. sp.

Perithecia dispersa vel subaggregata, immersa, lentiformia, nigra, glabra, usque ad 900μ long et 600μ lat., 700μ alt., sursum in ostiolo glabra usque ad 250μ long. et alt. producta, apice rotundata, per rima brevi dehiscentia, labiis levibus; paries durus, carbonaceus, opace niger, fragilis, usque ad 80μ cr. Asci numerosi, cylindracei, apice rotundati, deorsum attenuati, breve stipitati, usque ad 240 × 15μ, 8-spori. Sporae oblique 1–2-seriatae, fusoideae utrinque rotundatae, 7-septatae, haud constrictae, leves, rectae vel curvulae, 38–48 × 9–10μ, brunneae utrinque pallidiores.

Hab. in ramis emortuis *Acaciae kempeanae*, Ernabella, Musgrave Ranges, Central Australia, J. B. Cleland in WARI 5497.

Perithecia scattered or in small, loose groups, buried in the wood with only the ostioles showing; these to 250μ high and long, 100–150μ thick, rounded at the apex and dehiscent by a short slit, black glabrous, with smooth lips; body of perithecium to 900μ long by 500–600μ wide and to 700μ deep, entirely buried in wood and bark, which is not blackened; wall carbonaceous, hard, brittle, up to 80μ thick around the loculus. Asci numerous, cylindric with rounded apex, not or very slightly thickened, attenuate below into short stipe, 8-spored, to 240 × 15μ. Spores obliquely 1–2-seriate and imbricate, fusoid with rounded ends, 7-septate, not constricted, smooth, often slightly bent, 38–48 × 9–10μ, dark brown with lighter to subhyaline ends, the central cells largest. Paraphyses numerous, filiform, hyaline, 1μ thick, continuous, equalling or slightly exceeding the asci.

(307) Durella hoveae Hansf., n. sp.

Apothecia hypophyllous, apparently parasitic on leaf-hairs, loosely and irregularly scattered, black, discoid to subglobose, to 200μ diam. and 80–100μ high. Excipulum thin, of dark brown, septate, parallel hyphae, 3–4μ wide. Asci numerous, clavulate, rounded at apex, slightly attenuate below, thin-walled, 8-spored, 40–45 × 10μ. Spores parallel,

hyaline, clavulate-fusoid, rounded at apex, gradually attenuate to acute base, smooth, transversely 3–5-septate, not constricted, 20–24 × 2μ. Paraphyses numerous, filiform, hyaline below, exceeding the asci and forming a thin, dark brown epithecium.

On leaves of *Hovea acutifolia*, Queensland, Langdon in WARI 7744.

Apothecia hypophylla, laxe et irregulariter sparsa, atra, discoidea vel subglobosa, usque ad 200μ diam. et 80–100μ alt. Excipulum tenuum, ex hyphis atrobrunneis, septatis, parallelis, 3–4μ lat. compositum. Asci numerosi, clavulati, apice rotundati, deorsum leniter attenuati, 8-spori, 40–45 × 10μ. Sporae parallelae, hyalinae, clavulato-fusoideae, apice rotundatae, deorsum ad basim acutam gradatim attenuatae, leves, transverse 3–5-septatae, haud constrictae, 20–24 × 2μ. Paraphyses numerosae, filiformes, deorsum hyalinae, ascos superantes et epithecium tenuum, atrobrunneum efformantes.

Hab. in foliis *Hoveae acutifoliae*, Mt. Coot-tha, Queensland, Langdon in WARI 7744.

(308) Lecanidion clavisporum (B. & Br.) Sacc., *Syll. Fung.*, 18: 184. 1906.
= *Durella clavispora* Sacc., *l.c.*, 8: 794. 1889. = *Patellaria clavispora* B. & Br., *Ann. Mag. Nat. Hist.*, 13: no. 778. 1854.

On dead wood, Meningie, South Australia, L. D. Williams in WARI 7437.

(309) Uredo salicorniae G. H. Cunn., *Trans. N. Zealand Inst.*, 61: 417. 1930.

On *Salicornia australis*, Meningie, South Australia, L. D. Williams in WARI 7733.

(310) Uromyces otakou G. H. Cunn., *Trans. N. Zealand Inst.*, 54: 627. 1923.

On *Poa caespitosa*, Meningie, South Australia, L. D. Williams in WARI 7732.

(311) Bartalinia themedae Hansf., n. sp.

Pycnidia subepidermalia, laxe dispersa, singula vel raro 2-aggregata, depresso-globosa, usque ad 150μ diam., atra, punctiformia, glabra; paries membranaceus, 1–2-stratosus, cellulis angulosis, brunneis, 8–12 × 4–5μ, tenuiter tunicatis, apice poro rotundato circa 15μ diam. perforatus. Conidiophora breviter bacillaria, hyalina, sub-persistentia. Conidia in massa dilute brunnea, singula subhyalina, fusoidea, utrinque subacuta, recta, levia, 3–5-septata, haud constricta, 18–24 × 3μ, apice seta una, irregulariter 2–3-furcata, hyalina, usque ad 25 × 1μ ornata.

Hab. in culmis emortuis *Themedae australis*, Meningie, South Australia, L. D. Williams in WARI 6654.

Pycnidia subepidermal, loosely scattered, single or rarely 2-aggregata, depressed-globose, to 150μ diam., black, punctiform, glabrous; wall membranous, of 1–2 layers of angulose, brown cells, often in parallel series, 8–12 × 4–5μ, rather thin-walled; with small round apical pore. Conidiophores bacillary to 10 × 1μ, sub-persistent on the conidia as short basal seta; conidia brown in mass, subhyaline, fusoid with subacute ends, rather more attenuate downwards, straight or slightly bent, smooth, 3–5-septate, not constricted, 18–24 × 3μ; apex with 2–3-furcate seta, the branches widely divergent and up to 25 × 1μ.

(312) Camarosporium stipae Hansf., n. sp.

Pycnidia singulariter dispersa vel laxe lineriter subaggregata, nigra, punctiformia, subglobosa, immersa, glabra, 80–130μ diam.; paries tenuiter membranaceus, usque ad 10μ cr., pseudoparenchymaticus, cellulis externis angulosis, 8–10μ diam., dilute brunneis; poro apicali rotundato vel irregulari, circa 20μ diam. Conidiophora haud visa. Conidia ellipsoideo-fusoidea, recta vel curvula, apice obtuse rotundata, basi attenuato-truncata, ex hyalino brunnescentia, transverse 7-septata, non vel vix constricta, levia, 30–36 × 8–10μ, cellulis mediis 1–3, longitudinaliter 1-septatis.

Hab. in foliis vetustis *Stipae* spec., Meningie, South Australia, L. D. Williams in WARI 7419.

Pycnidia on old or dead leaves, scattered singly or loosely aggregate in lines, black, punctiform, immersed, globose, glabrous, 80–130μ diam.; wall thinly membranous, to 10μ thick, pseudoparenchymatous, pale to yellowish brown, darker around the apical pore, composed of angular cells 8–10μ diam.; apical pore piercing the covering epidermis, round to irregular, about 20μ diam. Conidiophores not seen. Conidia elliptic-fusoid, straight or slightly bent, obtusely rounded at apex, slightly attenuate to subtruncate

base, from hyaline becoming brown, transversely 7-septate, not or very slightly constricted at septa, smooth, mostly with a single longitudinal septum in one or more of the middle cells, 30–36 × 8–10μ.

(313) CLADOCHAETE GREVILLEAE Hansf., n. sp.

Pycnidia superficialia, atra, subglobosa, usque ad 120μ diam., sursum setosa, in hyphis mycelii superficialis dispersa; paries membranaceus, unistratosus, cellulis angulosis, atrobrunneis, tenuiter tunicatis, 6–8μ diam.; poro apicali irregulari 15–20μ diam.; setae numerosae, erecto-patentes, atrobrunneae, rectae vel leniter flexuosae, simplices, obtusae, septatae, leves, crasse tunicatae, usque ad 100 × 5μ, apice pallidiores. Conidiophora non visa. Conidia numerosissima, loculum completentia, ovata, brunnea, continua, levia, sursum ad apicem obtusam rotundatam et deorsum ad basim truncato-apiculatam attenuata, 5–7 × 3–4μ.

Hab. in foliis subemortuis *Grevilleae robustae*, Coonabarabran, New South Wales, 9.1955, L. Fraser in Herb. Dept. Agric. Sydney.

Pycnidia scattered on a loose superficial mycelium of pale brown, ramose, septate, exhyphopodiate hyphae, usually single, black, setose above, superficial, subglobose, to 120μ diam.; wall thinly membranous, of one layer of angular dark brown cells 6–8μ diam.; thin-walled, opening at apex by irregularly rounded pore 15–20μ diam.; setae numerous, erect-spreading, dark brown, straight or slightly flexuous, simple, obtuse, septate, smooth, thick-walled, to 100 × 5μ, paler at apex. Conidiophores not seen. Conidia very numerous, filling the whole loculus, ovate, brown, continuous, smooth, attenuate to obtuse rounded apex and to slightly truncate-apiculate base, 5–7 × 3–4μ.

(314) HENDERSONIA EPICALAMIA Cooke, *Praecurs. Monogr. Hendersonia*, p. 19. 1878.

On dead culms *Phragmites communis*, Meningie, L. D. Williams in WARI 6652.

(315) LASMENIA HYPOXANTHUM (B. & Br.) Hansf., comb. n.

= *Rhytisma hypoxanthum* B. & Br., PROC. LINN. SOC. N.S.W., 5: 89. 1880; Sacc., *Syll. Fung.*, 10: 51. 1892; Cooke, *Handb. Austr. Fungi*, 1892, p. 300.

Leafspots black-brown, rounded or irregular, to 25 mm. diam., thickened, smooth, shining, with definite margin, with scattered, slightly depressed, black, fructifications on upper surface. These pycnidia originate in the epidermis, which is filled completely with a black clypeal stroma, extending as loose hyaline hyphae into the mesophyll of the greatly hypertrophied leaf tissues; the original black stroma splits horizontally, the upper part, about 10μ thick, still covered by the intact cuticle, lifts, and the lower part, 10–20μ thick, develops an internal, hyaline, thin tissue of small cells, the innermost giving rise to the close palisade of conidiophores. These are erect, 10–15μ long, simple, more or less straight, about 2μ wide at the base, gradually tapering to the apex which abstricts single conidia, continuous, hyaline. Conidia when mature yellow-brown, brown in mass, ovate-ellipsoid with rounded ends, straight, continuous, smooth, 4–6 × 2–2·5μ, exuding and covering the external surface with a thin black layer.

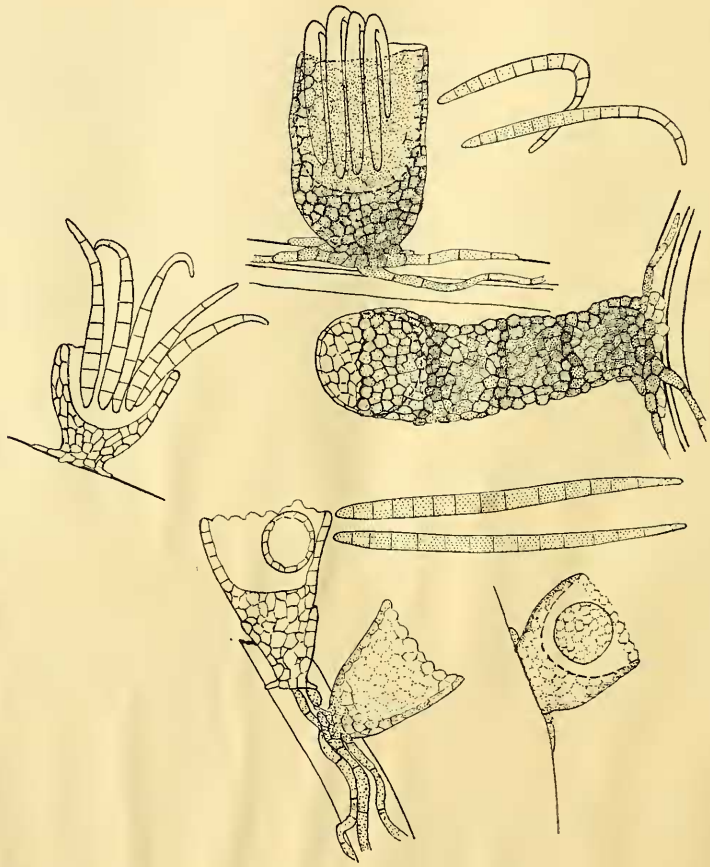
On *Cudrania javanica*, Pimpama, Queensland, Bailey 701, 850 in Herb. Kew, duplicated in Qld. Herb. 1764; on *C. cochinchinensis*, Palmerston Highway, Queensland, 5.1955, L. Fraser in Herb. Dept. Agric., Sydney.

(316) PHAEOSEPTORIA EUCALYPTI Hansf., n. sp.

Maculae nullae; pycnidia hypophylla, dense dispersa, singula vel pauci aggregata, separata, subepidermalia, usque ad 150μ diam. et ad 100μ alt., nigra, subglobosa, glabra, demum per epidermidem elevatam suberumpentia; paries usque ad 20μ cr., membranaceus, atro-brunneus, 2–3-stratosus, ex cellulis angulosis 8–12μ diam. compositus; primo apice leniter papillata et poro rotundato pertusa, demum late aperta. Conidia brunnea, cylindricaeo-fusoidea, recta vel curvula, sursum gradatim attenuata, apice rotundata, pallidiora, 2–3μ cr., deorsum ad basim rotundatam vel subtruncatam 4μ lat. attenuata, 1–3-septata, haud constricta, 30–40 × 4–5μ, levia. Conidiophora stipata, continua, cylindracea, simplicia, brunnea, 10–12 × 3–4μ.

Hab. in foliis *Eucalypti grandis*, Sydney, New South Wales, N. H. White in WARI 7137.

Pycnidia not on leafspots, hypophyllous, closely scattered over the whole leaf, single or few-aggregate, separate, slightly elevating the epidermis and finally suberumpent, to 150μ diam. and about 100μ high, black, punctiform, subepidermal, usually each beneath a host stoma, subglobose, glabrous; wall to 20μ thick, dark brown, membranaceous, formed of 2–3 layers of brown, angulose pseudoparenchyma 8–12μ diam., slightly compressed; at first with slightly papillate ostiole and round pore, later becoming more or less widely open. Conidia brown, cylindric-fusoid, gradually attenuate to rounded and often paler apex 2–3μ wide, and to rounded or subtruncate base 4μ wide, straight or slightly bent, smooth, transversely 1–3-septate, not constricted, 30–40 × 4–5μ. Conidiophores closely packed extensions from the cells of the interior surface of the wall, continuous with basal septum, cylindric simple, brown, 10–12 × 3–4μ, forming single apical conidia.



Text-fig. 1.—Stages in development of primary pycnidium; mature composite pycnidium; mature pycnospores. × 500.

(317) SHAWIELLA Hansf., n. gen. (*Phomales*).

Pycnidia superficialia, singula, olivacea, glabra, globosa vel cylindracea, astoma, apice irregulariter fissa, demum late apertà et cupulata, membranacea. Pycnosporae erectae, parallelae, fasciculatae, primo hamatae, demum rectiusculae, fusoideae, transverse multiseptatae.

SHAWIELLA GREVILLEAE Hansf., n. sp. (Text-fig. 1).

Pycnidia hypophylla, singula vel 2–3-aggregata, atro-olivacea, globosa, demum cylindracea, molliter membranacea, glabra, superficialia in hyphis mycelii in pilos folii;

paries pycnidii unistratosus, ex cellulis rotundato-angulosis compositus 4–6μ diam.; pycnidia globosa usque ad 35μ diam., pycnidia cylindracea usque ad 100 × 3–5μ.

Pycnosporae fasciculatae, erectae, hyalinae demum brunnescentes, fusoideae, basi rotundatae, sursum ad apicem obtusem attenuatae, transverse multiseptatae (5–13), haud constrictae, leves, primo hamatae, demum rectiusculae, 60–95 × 5–6μ.

Hab. in foliis *Grevilleae robustae*, Garaina, New Guinea, D. Shaw 672 (WARI 7773).

The pycnidia are hypophyllous, single or in small groups at or near the apices of individual leaf-hairs, minute, black, globose to cylindric, soft membranous, sessile on a mycelium of olivaceous hyphae climbing up the leaf-hairs. There are no leafspots, and the fungus appears to be a parasite of the leaf-hairs only. The youngest pycnidia are globose, sessile, dark olivaceous, smooth, glabrous, 20–30μ diam., with a wall of one layer of olivaceous rounded-angulose parenchyma, the cells 4–5μ diam., and open irregularly at the apex, becoming wide cupulate. The pycnospores are formed in a basal fascicle of 7–15 spores, and even after discharge long remain in the fascicle, though not organically connected; inside the unopened pycnidium the spores are hamate, with the apex folded back; upon opening of the pycnidium the spores straighten out and continue growth, changing in colour from the base upwards, finally becoming brown with slightly paler apex. Mature spores are fusoid, slightly attenuate to the rounded base, more gradually attenuate to the obtuse apex, smooth, almost straight, transversely 9–13-septate, not constricted, 60–95 × 5–6μ.

After the spores have been discharged from the primary pycnidium, a new pycnidium develops from any point of the interior of the original wall, finally completely filling the original open cup and extending beyond its edge as a globose parenchymatous sac, containing a fascicle of young spores. This process of proliferation of the pycnidium may continue until five or six successive pycnidia have been formed, and the whole structure then becomes cylindric and to about 100μ long by 30–35μ diam., marked along its lower part by the rather inconspicuous ridges and constrictions representing the mouths of the successive pycnidia.

(318) Stagonospora elegans Sacc. & Trav. in *Sacc. Syll. Fung.*, 20: 878 and 22: 1056.

On dead culms *Phragmites communis*, Meningie, South Australia, L. D. Williams in WARI 7436.

(319) Antromyocopsis leucopogonis Hansf., n. sp.

Synnemata ex foliis emortuis erumpentia, laxe dispersa vel subaggregata, hypophylla, olivacea, usque ad 1 mm. alt., basi sub-bulbosa, usque ad 600μ diam., stipite circa 600μ long. et 400μ diam., capitulo subgloboso vel irregulariter plano, usque ad 800μ diam. Conidiophora divergentia, cylindracea, subhyalina, 15–20 × 2–3μ, saepe sursum leniter attenuata. Conidia terminalia, catenulata, ovoidea, apice rotundata, deorsum lenissime attenuata, basi subtruncata, continua, subhyalina, in massa olivacea, levia, 6–8 × 4–4·5μ.

Hab. in foliis emortuis *Leucopogonis costati*, Meningie, South Australia, F. Hilton in WARI 6605.

Synnemata erumpent from dead and dying leaves and scales, loosely scattered to subaggregate, hypophyllous, olivaceous-black, to 1 mm. high; base often enlarged to sub-bulbous, to 600μ diam., narrowed above into a short stipe about 600μ long by 400μ diam., bearing a subglobose to rather irregularly flattened head up to 800μ diam.; stipe formed of parallel hyphae, brown, septate, 3–4μ wide, slightly divergent on the surface and forming a loose coating of short obtuse ends over stipe and bulbous base, giving a tomentose to pruinose appearance; these ends are not differentiated as setae. In the head the stalk hyphae diverge and branch; ultimate branches sporogenous, cylindric, subhyaline, often slightly attenuate towards the apex, 15–20 × 2–3μ wide below, each forming a single, simple, apical chain of conidia. Conidia ovoid, rounded at apex, very slightly attenuate towards subtruncate base, continuous, subhyaline, olivaceous in mass, smooth, 6–8 × 4–4·5μ. The conidia are dry, giving an olivaceous surface to the capitulum, which is not shining.

The fungus apparently causes the death of infected leaves and tips of the branches.

(320) ARTHROBOTRYUM GORGONEUM Cif., *Mycopathologia*, 6: 24. 1951.

Synnemata closely scattered, black, erect, straight, to 1300 × 40–45μ, slightly swollen, but not bulbous at the base; stalk portion straight, cylindric, composed of parallel, dark brown, septate hyphae, which diverge widely in the upper third as loose conidiophores, to give a bottle-brush appearance to the whole fructification. Conidiophores loosely and widely divergent, up to 330 × 6–7μ, septate, brown, flexuous to slightly geniculate at the successive conidial scars, which are flat and scarcely projecting. Conidia single and terminal, soon becoming lateral by continued growth of the conidiophore axis, at first hyaline and ellipsoid, becoming elongate and brown, widest in lower third, attenuate to subtruncate base, and to rounded, paler apex, smooth, transversely 3–5-septate, mostly 4-septate, not constricted, 50–75 × 6·5–9μ.

Parasitic on *Asteridiella entebbeensis* (Hansf. & Stev.) Hansf., var. *crotonis* Hansf., on *Croton* sp., Keravat, New Britain, D. Shaw 1204 (WARI 7770 p.p.).

It is considered probable that this is identical with "*Podosporium penicilloides* Karst. & Roum.", but no authentic material of this has been available for comparison.

(321) CERCOSPORA HOVEAE Hansf., n. sp.

Conidiophora hypophylla, dense fasciculata (–4 mm. diam.), erecta, flexuosa, atrobrunnea, septata, usque ad 1000 × 4–5μ, simplicia vel subinde sursum irregulariter furcata, versus apicem pallidiora. Conidia singula, terminalia, cylindracea vel lenissime obclavata, recta vel curvata, apice rotundata, basi subtruncata, dilute fumoso-brunnea, levia, transverse 3–9-septata, haud constricta, 35–100 × 5–6μ. Maculae nullae.

Hab. in foliis *Hoveae acutifoliae*, Mt. Coot-tha, Queensland, Langdon in WARI 7744.

Leafspots none. Conidiophores formed in dense tufts to 4 mm. diam. on lower surface of leaf, loosely velvety, black; single conidiophores erect, flexuous, septate, dark brown, to 1000 × 4–5μ, simple or sometimes irregularly furcate above, becoming paler towards apex, forming single conidia at intervals of 150–200μ. After formation of a conidium, the conidiophore continues growth through its scar, which remains as a ring around the axis. Conidia single, terminal, cylindric to slightly obclavate, straight or bent, gradually attenuate to the rounded apex and to the sub-truncate base, pale fumose-brown, smooth, transversely 3–9-septate, not constricted, 35–100 × 5–6μ.

(322) HANSFORDIA GRISELLA (Sacc.) Hughes, *Mycol. Papers*, C.M.I., 43: 21. 1951.
= *Botrytis grisella* Sacc., *Syll. Fung.*, 4: 124. 1886.

Forms a thin grey mould over the surface of the dead leaves. Main axis of conidiophores brown, straight, erect, septate, not constricted, smooth, becoming paler and slightly narrower above, to 450 × 6μ wide below; 2–3 times verticillate, with 2–3 branches at each fork, in the upper part, the branches hyaline, divergent. Ultimate branches sporogenous, simple, slightly attenuate to apex, hyaline, smooth, about 15 × 4μ, bearing single apical conidia on short sterigmata about 1 × 1μ; the parent cell grows past each sterigma to form others in succession, so that a small head of 3–4 conidia is thus formed at the end of each sporogenous cell. Conidia globose, hyaline, smooth, continuous, 5–6μ diam.; when shed the whole of the sterigma remains on the parent cell.

On dead leaves *Eucalyptus* sp., Meningie, L. D. Williams in WARI 7435.

(323) HANSFORDIA TELOPEAE Hansf., n. sp.

Plagulae hypophyllae, atrobrunneae, tenues, velutinae, effusae. Hyphae dilute brunneae, flexuosae, irregulariter ramosae, 2·5–3·5μ cr., laxe irregulariterque reticulatae, exhyphopodiatae, superficiales. Conidiophora dispersa, singula in hyphis mycelii, vel 2–5-aggregata ex nodulis mycelii, erecta, recta vel leniter flexuosa, deorsum atrobrunnea, levia, septata, usque ad 80 × 6–7μ, sursum leniter attenuata et pallidiora, prope apicem laxe irregulariter ramosa, ramis subinde furcatis, haud verticillata; ramulis ultimis dilute brunneis, apice hyalinis, 10–20 × 3–4μ, rectis vel leniter flexuosis, lateraliter cicatricibus conidiorum subdense punctata. Conidia acrogena, ovata vel cylindraceo-ellipsoidea, apice obtuse rotundata, basi rotundata et in centro lenissume truncato-apiculata, levia, continua, hyalina, demum dilute olivacea, sicca, 7–11 × 3–3·5μ.

Hab. in foliis *Telopeae speciosissimae*, Sydney, New South Wales, L. Fraser in Herb. Dept. Agric. Sydney, and WARI 6626.

The conidiophores are simple to near the apex, where the irregular branching gives rise to a loose head of short sporogenous cells; the conidia are formed singly at the apices of these cells, which grow past the conidial scars to form others in close succession; the scars thus left on the sides are slightly prominent, circular, 1–1·5μ diam.

(324) HELMINTHOSPORIUM sp. near H. TRISEPTATUM Drechsler, *Journ. Agr. Res.*, 24: 686. 1923.

On old wheat grains lying on soil, Adelaide, cultured by Warcup and Van Velsen, 1956, no. W 100.

Note: Correction.

In these PROCEEDINGS, 79: 138, 1954, No. 167 of this series of Australian Fungi was published as "*Septoria carpholobi* Hansf., n. sp.", and the host was given as "*Carpolobus aequilaterus*". These should be amended to "*Septoria carpobroti* Hansf., n. sp." and "*Carpobrotus aequilaterus*" respectively.